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Official Journal of the Rocks and Minerals Association

A Magazine for Mineralogists, Geologists and Collectors

JANUARY, 1946

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Vol. 21, No. 1

Whole No. 174

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The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

Gets Rocks and Minerals Regularly

During the past six months or more, we have received many letters from members complaining about their copies of *Rocks and Minerals* arriving late. Letters of complaint are still coming in — apparently members have forgotten the editorial which appeared in the August, 1945, issue. In every case, however, the chief cause for complaint was the fear that choice mineral specimens advertised by dealers would be all gone before the writer's copy containing the ads would reach him.

There is now, beyond all doubt, an intense interest in minerals and collectors all over the country are striving desperately to purchase choice specimens.

We wish it were possible for each member to get his copy of *Rocks and Minerals* FIRST. And we also wish that each dealer advertising choice specimens could have 3,000 or more of each item — instead of only 1 or 2. Since neither of these two wishes can be carried out, the only solution seems to be — get *Rocks and Minerals* regularly and one of these days a choice item may be your reward!

Attention Advertisers

It takes about 3 weeks to get out an issue of *Rocks and Minerals* — from the 10th to the 31st. The first week is spent in arranging articles, announcements, reports, and other items for that issue — as well as the many ads which have been received. The remaining 2 weeks is used by the printers in setting type and printing the magazine.

It is quite a task to get out an issue and we must have a dead-line for receiving items for it. This dead-line is the 10th of the month preceding that issue's appearance. For example, to get an ad in the March issue, the copy must reach us by February 10th. All items arriving after February 10th will be held over for the April issue.

Advertisers, please cooperate with us! Get your ad copies in by the 10th. And if it should happen that your copy for the March issue is sent late so that it does not reach us until February 25th, the 28th, or even later up to March 5th, do not send us a letter of complaint because your ad fails to appear!

—o—

ADDITIONAL NOTE ON A MULTI-COLORED STONE

By W. H. HAYES
Irvington, N. J.

In the October, 1945, issue of *Rocks and Minerals* (p. 478), I read the short article on the multi-colored stone found at the Oak Ridge Reservoir in northern New Jersey (on N. J. 23, about 10 miles S. E. of Franklin). It so happens that I visited that deposit a few weeks ago (in November, 1945) and perhaps the following information may be of interest to some readers.

The make-up of the rock in the road cut of the locality consists of a number of wide vertical veins measuring sometimes several feet in width which run through a greater deposit of granitic rock. These veins are composed of an intimate mixture of epidote of a bright olive-green color, feldspar of both white and pink colors, and upon close scrutiny may be found some very small crystals of striated pyrite. The hardness of the epidote is about 7, apparently equivalent to the hardness of the feldspar and associated grayish quartz. The epidote is quite tough and not easily broken out for specimens. No crystals of epidote were seen although a search was made for them. The wall rock on the eastward side of the road is quite fresh and free from weathering or smoke stains and is very handy for a collector from which to procure specimens.

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THE GLACIAL LAKES OF THE SHAWANGUNK MOUNTAINS, ULSTER COUNTY, NEW YORK

By **RICHMOND E. MYERS**, Department of Geology
Muhlenberg College, Allentown, Pennsylvania

Perched high on the top of the Shawangunk Mountains in Ulster County, New York, are a group of lakes, several of which for years have been famous for their limpid beauty, and have attracted thousands of visitors to linger and rest in the sheer magnificence of their natural setting. These lakes, some of which are hemmed in by high cliffs on all sides, can be favorably compared with many of the better known and more famous mountain lakes in other parts of the country, but altho the lakes of the Rockies, Sierras, and even the Adirondacks may claim greater altitudes, the lakes of the Shawangunks can not be surpassed by the interest in which they arouse in the visitor who sees them for the first time, or returns to them season after season, to enjoy the loveliness of their waters and surroundings.

In a distance of twelve miles as the crow flies, lie the five lakes. The most southwesterly of these is Maratanza, the smallest. The next, to the northeast is Mud Pond, or Haesco. Awosting, the largest, lies close by, and then comes Minnewaska. Five miles northeast of Minnewaska is Mohonk. This completes the roster of the Shawangunk lakes.

One of the questions that arises in the minds of the inquiring visitor, the first time he or she beholds one of these lakes, is; "How did this water ever come to be here?" It is a natural question, for one does not expect to find such bodies of water high up on top of this mountain ridge. The answer to the question is not a simple one. It involves turning back the hands of time many ages, into the dim horizon of what geologists call the Pleistocene, and considering for a few moments the most powerful and relentless erosive power that nature employs,—ice.

Lakes Owe Their Origin to the Last Ice Age.

All of these lakes owe their origin to the last ice age. It is not our purpose here to discuss in turn the origin of this period of refrigeration. Suffice to say that with gradual changes of climate from warm to average freezing temperatures (over a vast period of time) more snow will fall than will melt during a year. Eventually an entire region will be covered with great masses of snow. This in time, through compaction and other forces, will become glacial ice. Due to pressure from the center, this ice will push out along its edges, and reach as far south as freezing temperatures are maintained. At the point where temperature rises above freezing, the ice will of course melt, and advance no further.

The present Shawangunk Mountains were covered with ice of this kind, only a short time ago, as a geologist reckons time. This was during the Pleistocene ice age, which occurred so close to the present, that some geologists maintain that we are now living in the tail end of that last glacial period. Actually, for our story, it is of no great importance how long ago the ice came or left, measured in a stated number of years. It is safe enough to estimate that glaciers were covering the top of the Shawangunks fifty thousand years ago, and possibly much closer to the present than that. It is also probable that the ice was there about

one hundred thousand years, but when geologists glibly talk in millions of years, a mere hundred thousand is hardly worth mentioning.

Ice Age Left Many Clues.

One reason why we know the ice was so recent, is that the clues it left scattered around the landscape are fresh and abundant. Large amounts of glacial debris are found in the valleys below the mountains, and the surface rock on the mountain top is grooved and polished by the boulders that were imprisoned in the bottom of the ice as it moved over the mountains. Many of these grinders are lying where they dropped when the ice melted, and not infrequently they are found to be composed of rock that was brought south from the Adirondacks or New England mountains.

Then there are the lakes themselves. Rather than take up each one as a unit, it will be best to consider one of them as a type. Lake Minnewaska may well be chosen for this purpose.

Several theories have been advanced concerning the origin of this lake. All admit ice as a factor but differ in the details of how the ice actually formed the present lake. Before the lake was created, however, the basin in which the waters now lie had to be formed. It was here that the ice entered into the picture. Dr. Doughty has aptly likened it to the way in which a modern bulldozer goes about its task, pushing tons of material before it. However, to understand fully this excavating activity of the glacier, it will be necessary to explain briefly a few facts about the structure of the Shawangunks and the rocks of which they are formed.

Shawangunk Mts. Composed of Conglomerate.

The Shawangunk Mountains are composed of a hard tough rock known as a conglomerate or grit, which is made up chiefly of quartz pebbles and cobbles cemented in sandstones. This formation, bearing the same name as the mountains, reaches southwest across New Jersey and Pennsylvania, on through Virginia and the Carolinas into Alabama. It was formed at the beginning of the Silurian period, about 375 million years ago, but this is the age of the formation that composes the mountains, not the age of the mountains themselves. They were formed much later.

Conglomerate Deposited on the Upturned Edges of Shales.

This conglomerate was deposited on the upturned edges of a series of younger shales and slates, known as the Martinsburg formation, or as in New York State, the Hudson River shales. The contact between these two formations can be observed at Otisville, about 30 miles southwest of Lake Minnewaska. It represents a break in the record of deposition, or a loss of evidence concerning the events that took place between the tilting up of the shales, and the time when the sediments that were later to form the Shawangunk formation were laid down on top of them. Such a contact is called an unconformity by geologists.

Now the thickness of the Shawangunk formation at Minnewaska is roughly five hundred feet. It is not improbable that the basin or hole that is occupied by Lake Minnewaska reaches down through this thickness to the shales underneath. This can explain the continual supply of water for the lake, as water will follow a line of weakness in the earth, and often an unconformity is such a line of weakness. Water flowing along this particular unconformity, may have its source as rainfall, many miles away, in the Catskills for example.

Rock Faults May Have Gouged Out Hole for Each Lake?

Yet how could the ice alone have gouged out so deep a hole in so hard a rock? It is quite possible that the rock was prepared for the ice by considerable weathering beforehand. Another kind of line of weakness probably had developed long before the ice moved into the picture and began operations. This would be a break in the rock known as a fault, or a series of faults close together. Such faults are believed by some geologists to have been controlling factors in the locating of the water gaps across the same ridge to the southwest. That they do exist in the neighborhood of Lake Minnewaska is seen in the actual breaks themselves, which are known to summer visitors as

"The Crevices". Altho these cracks have been opened largely through forces of erosion following the initial fracture in the rock, they are primarily faults as can be seen in the displacement both horizontal and vertical.

Whatever the actual factor may have been that created the line of weakness, without the ice there probably would have been no lake, for it is hardly conceivable that the basin reached down to the unconformity below, prior to the coming of the glacier, and thus the source of a permanent water supply would have remained untapped.

Melting of Glacial Ice Produced Water for Lakes.

Another theory has been suggested; that large masses of ice were lying in the basins of the lakes, when the ice front receded to the north with the gradual passing of the ice age. These blocks of stagnant ice eventually melted, leaving the crystal clear water of the Shawangunk lakes. Altho this may have been the case, it does not account for the supply of water, which is always present.

Underground Water is Probable Source of Present Lakes.

It is also conceivable that the fau't lines may be the passageways through which the water reaches the lakes. Water elsewhere does move along such lines in great quantities, and many large springs are supplied in this manner. That some of the waters of these lakes reaches them along fault lines may well be so, but that does not eliminate the possibility of the deeper supply along the line of unconformity.

Thus we see several possible answers to our question, differing only in detail but agreeing in the general principle that recognizes these lakes as being glacial in origin.

—o—

CLAYSTONE CONCRETIONS AT RUFUS, WISC.

By FRED G. KNOWLTON

Barksdale, Wisconsin

A few years when I became interested in rocks and minerals, I used to spend considerable time (and still do) going over the shores of Lake Superior and Chequamegon Bay (in N. Wisconsin) looking for agates, float copper, and of late, zeolites. Well, in going over one beach near Rufus, about 15 miles east of Ashland (in N. Wisconsin), we came across some very interesting claystone concretions in the form of balls about the size of marbles. On other trips we kept going further down the beach and found many more concretions in various shapes. Later we found the concretions in the banks along the shore — these are much rougher than those occurring in the wash of the waves.

These clay banks are mostly of heavy red (feldspar) clay but near the bottom in some places there is a layer of very fine sand and clay mixture, and it is in this mixture where we have found the concretions. These clay banks are from 60 to 75 feet in height and in places have eroded into grotesque shapes. Some of the small streams running into Lake Superior have eroded down into this lower layer and carried away the concretions into the surf.

In many places the clay from high up the cliff slides down, covering the lower strata for long distances and in that case there are no more concretions to be had until the waves wash the base of the bank out into the lake which turns the water red for a mile or more out from the shore.

The concretions are reddish in color and vary in size from 1/4 inch marbles up to 3 inch balls as well as in the odd shapes which are so typical of claystone concretions — nodular, spherical, elongated, etc., and combinations of any of these forms to make very odd and fantastic specimens. I have one specimen that resembles a duck.

An interesting place to spend a day in nice weather, if wind is not too stiff from the lake, is the Rufus beach on the southwestern shore of Lake Superior.

WHAT! NO MINERALS IN CHERRY VALLEY?

By VERA ROOT SMITH

As an amateur rockhound, my impression was that my new home, Cherry Valley, Illinois, was devoid of mineralogical or geological interest. Certainly it presented a blank outlook to one familiar with such eastern collector's meccas as Bedford, Tilly Foster, Portland, and Roxbury.

Rocks, in Cherry Valley, are conspicuous by their absence. I learned that the geological resources here are: an abundant hard water supply, good farming soil, and GRAVEL!

Since my collection consists of miniature bits of brightly colored, or oddly formed minerals, such as rose quartz, serpentine, beryl, and garnet, the situation looked hopeless — at least, during the gasless war period.

"Once a rockhound, always a rockhound" has proven its truth once again, for, in an absent-minded sort of way, I found myself examining the gravel beside the roads and along the railroad track. Now and then a pebble found its way into the house. Then, too, as I exercised the yard dog, or sat fishing on the river bank, I idly examined the topography. Slowly, but surely, these idle collectings and observations began to acquire interest. Things I noted puzzled me and I became awfully curious about Cherry Valley and its geology. Could this ordinary, quiet little town have a story to tell? And what geologic processes had produced those singular manifestations which so bewildered me? I became particularly tormented by asking myself the following questions without being able to figure out their answers.

1. Why is this town called "Cherry Valley"? To be sure, it is in a valley, but there is not a cherry tree to be seen — the box-elder, being the all-too-characteristic tree.
2. How is it that, in Cherry Valley, wells are only twenty feet deep; while in neighboring Rockford, drilled-wells hundreds of feet deep are necessary?"
3. How can it be that the lower part of the Kishwaukee River cuts through a rugged young valley, showing a bluff of bed-rock in the Kishwaukee Forest Preserve five miles south of Cherry Valley; while its two branches are bounded by gentle slopes thru which the stream winds and meanders?
4. Why is the Cherry Valley gravel peppered with igneous and metamorphic specimens when the bed-rock is all known to be sedimentary in origin?
5. What can be the nature of that conspicuous, light-speckled, dark-red rock that is common to the gravel?

The history of Cherry Valley

My curiousity led me to question neighbors and to write to the Illinois State Geological Survey. I am very grateful to Hazel Green and Effie Hall; and to Drs. DeWolf, Weller, and Ekblaw for their kindly interest in helping me find the answers to my puzzles.

First, about Cherry Valley. It is prettily located, in the valley, and on the low terraces of the North Branch of the Kishwaukee (Indian word meaning "clear water"), about eighty miles northwest of Chicago, and eight miles east of Rockford. It is surrounded by gently rolling farming country, pleasantly studded with groves of trees.

About a hundred years ago, there were only a few houses, a grist mill, and an inn, in this valley. These were considered an outlying part of the town of Guilford. Once each day, cumbersome four-horse stage coaches passed through on their way from Chicago to Galena, stopping at the inn, to rest and to change horses.

From 1836 to 1854, Galena was a metropolis — the center of a lead mining district. The lead was usually transported via the Mississippi — a long, slow, expensive process, but a few wagon trains made the 180 mile trip over the poor, and frequently impassable, road to Chicago. Both modes of travel proved so hard and tedious that a railroad was start-

ed in Chicago, to connect the two cities. The main part of Guilford hoped that the railroad would pass through it. When, instead, it was built through the little settlement on the Kishwaukee River, the jealous Guilfordites dubbed their successful rival, "Grab All".

Naturally, the name "Grab All" was resented, so the people who lived there, decided to break away from Guilford and make a town of their own. They called a meeting for the purpose of organizing and naming the new town. Each person thought of the best name he could, and wrote it on a slip of paper. The papers were put in a hat, and mixed up, and then one paper was selected. That paper read "Cherry Valley", it having been written by a lady who had come from a town of that name in New York State! Everyone was pleased at the result of the drawing, and so "Grab All" became "Cherry Valley". In passing, it may be noted that the original Cherry Valley gives its name to a New York rock formation — the Cherry Valley (Agoniatite) limestone.

Some notes on the Geology of Cherry Valley

In the valley here, the water-table is unusually high, which is the reason that such shallow wells are possible; whereas on the uplands it is necessary to drill a hundred feet or more to get water; and in Rockford, where the bedrock is near the surface, drillings for industrial and municipal wells are over 2000 feet in depth. The valley of the Kishwaukee here has over a hundred feet of gravel on top of the bedrock. The astonishing fact is that, by hand, in two hours, two men can drive a well in Cherry Valley that will yield good and ample water for the average home. The men merely rhythmically push the point and piping into the earth!

The water, because of its lime carbonate, is good for cement and concrete work and, as one of my bulletins states, "is not especially harmful to man". However, it is bad for boilers, and next to impossible for washing purposes. Water-softeners are part of standard plumbing equipment in the better homes; but most of us have cisterns to catch rainwater and we use this for everything except cooking and drinking. The hard water causes some annoyance and amusement to unsuspecting strangers who are disconcerted to discover that after a shampoo, they cannot get the comb thru their hair. As a rockhound, I get a kick out of seeing the growth of stalactites and stalagmites in the teakettle!

In Cherry Valley, the bedrock is a carbonate of calcium and magnesium known as the Galena limestone or, more accurately, as the Galena dolomite. Around the city of Galena, this formation is the ore-bearing member — containing, among other interesting minerals, iron, zinc, and lead. The latter, by the way, is galena, as you have probably guessed.

The Galena dolomite is light blue-grey, weathering to yellow-grey. It is massive and hard, and some old outcrops are rugged and pitted. It contains a number of fossil bryozoans, corals, and shells. The fossil, receptaculites oweni, is so common and characteristic of this formation that it is relied upon to identify it. Once seen, receptaculites can be recognized without difficulty since it resembles no other fossil. Locally, it is known as "sunflower coral" or "lead sponge". When in its matrix, it looks like the center of a big sunflower, or, when in section, resembles a lot of little ladders joined together. It is called "lead sponge" because it occurs in the lead-bearing rock. It is now thought to be a sponge, although previously it was classified as a coral or sponge-coral.

Formations underneath the dolomite are also of sedimentary origin, so we know that for long ages this area must have been under water. The nature of the stone and its fossils show that, during its most recent period, the sea was shallow and clear; probably a bay of the ocean. After this sea receded, the land was scoured by glaciers, which brought along with them much rock debris from the north; from Wisconsin, from the Lake Superior area, and even from Canada. The glacial till dropped in the Kishwaukee valley near Cherry Valley

came from the Delevan lobe of the Wisconsin ice sheet. Most of the drift is rounded and beveled, showing it to have been an outwash deposit; otherwise it would be more angular and show striations.

The glaciers did not drop their loads evenly; some of the old river valleys were filled even highr than the surrounding land. As has been noted, about 100 feet of till filled the valley of the Kishwaukee in its north and south branches. But it left them still valleys, which drainage continued to follow. Just beyond the joining of the two branches however, the river valley was completely blocked with glacial material. It was necessary for the water to flow off in the lowest possible place so the river, in doing this, carved out a new channel for itself where little drift had been deposited. Thus, the young river valley to the south with its rocky bluff.

As indicated, gravel is plentiful in Cherry Valley. It makes excellent road ballast, and, when screened, is good for concrete work. Some of the farmers have their own pits. In general, the gravel consists of small pebbles, although, in excavations and in pits, one notes some good sized cobbles, and, very rarely, a bowlder. These are igneous or metamorphic and very massive and hard.

A tale of buried treasure!

Part of one such bowlder lies exposed. About 3½' x 1½' x 1' of it are visible. It looks like syenite. Neighbors have laughingly urged me to dig it up: for they say buried treasure lies beneath.

The story goes that pioneers settled around here before the land was surveyed or sold. Trouble came with the attempt to determine claims, and "claim-jumpers" and "land-sharks" preyed upon the settlers. One group of outlaws, called "Prairie Pirates", stole everything they could lay their hands on. Sometimes they had to hide their booty until they had a chance to dispose of it. Tradition has it, so the neighbors tell me, that they buried a chest of money under "my" bowlder. No doubt, any such treasure, if it existed, was removed long since, for the lawlessness ceased after the execution of two of the "pirates" in an adjacent county in 1841!

Pebbles are common in Cherry Valley

Some of the smaller stones are curiously symmetrical in form: one finds shapes that look like tear-drops, hearts, pieces of candy, pickles, and hot-dogs. A few specimens have beveled surfaces which suggest Indian spear heads.

Although the Black Hawk Indians are said to have roamed hereabouts, I have found only one thing which resembles an Indian artifact. This is a drop-shaped, mottled grey and white material, about an inch and a half long, and narrow, with a hole in the small end. It may have been a bead or charm.

A concentric circular form is seen in both quartzes and sedimentary rocks. There is one waxy-feeling pebble which has a center of bright pumpkin-yellow, and a glossy black exterior: another quartz specimen is a small nodular geode of white chalcedony containing tiny transparent quartz xls; a pebble of sedimentary origin (shale?) of a fine dark texture is encased in a velvety soft coat of limonite; and another sedimentary pebble has a tiny hole through its center which is completely surrounded by a perfect circle, stained yellow by limonite, in a matrix of grey. This latter is a "pipe-stem", an odd form caused by water depositing iron around rootlets in loess which is later consolidated into rock.

Occasionally a fossil appears in a quartz mineral. Somewhat more frequently, one finds quartz xls (minute) causing a sparkle or incrustation on a fossil in the dolomite. But most of the fossils here are in the sedimentary rocks; and, as one might imagine, they are not too easy to find on account of their being weathered, as well as being the same color as the matrix.

None of the Cherry Valley specimens I have, would interest an advanced collector as individual specimens. I find their charm in the wide variety. Because there is material here from lots of places, one never knows what may turn up next, as I imagine the geologist remarked when he

discovered a fine specimen of native copper in a stone in this quadrangle.

The most conspicuous and attractive of all the rocks is a red quartz porphyry, the native ledges of which are thought to be north of Lake Superior. The matrix is very hard and appears non-crystalline. It contains showy inclusions of glassy quartz and of light to dark pink feldspar.

To date, the following rocks, minerals, and fossils have been tentatively identified. According to the bulletins, it is probable, that these are only a few of what may be found with continued search.

ROCKS

1. *Dolomite.* Greyish yellow stones. Some pitted. Fossiliferous.
2. *Sandstone conglomerate.* Yellow brown sandstone containing pebbles of different kinds and colors.
3. *Shale.* Some blue grey; some almost black. Occasionally the light shale contains fossils. Some is ferruginous.
4. *Granite.* Pegmatite (pinkish red quartz, white feldspar, and mica), pink granite, syenite, gabbro, diorite.
5. *Red Quartz Porphyry.* Quartz and feldspar xls in hard dark red matrix.
6. *Gneiss. Fine grained bands of* black and white with suggestion of red.
7. *Quartzite?* Fine, hard, crystalline. Grey, and purple. May be hard sandstone.

(There should be dark brown limestone, basalt, diabase, and schist.)

MINERALS

1. *Chert.* Common. White and splintery. Gray.
2. *Flint.* Harder, more waxen and less chalky looking than above. Grey. Brownish grey. Black (rare). Concretions and nodules. Occasionally fossiliferous.
3. *Chalcedony.* Common. White to dark grey. Cloudy, to mottled, to banded. Nodules with geodic or eye form. Often contains, or shades off into, opaque flint or chert. Cherty forms are sometimes pink or cream colored.
4. *Milky Quartz. Rare. Occasional* water-worn pebble.
5. *Transparent Quartz.* Rare. Tiny xls in geodes, or studding fossils.
6. *Jasper.* Common. Red. Yellow. Red pebbles are often red thruout, but yellow pebbles are usually cream colored and cherty inside. Yellow "eyes" common in grey or white pebbles of chert. The most attractive jasper pebble shows brilliant red speckles in a dark purple-red matrix. A few tiny fragments approach carnelian in color and transparence.
7. *Feldspar.* Usually enclosed in granitic rock. White. Light pink to salmon pink. Good cleavage frequently noted.
8. *Limonite.* Common as discoloraations and coatings on stones. One odd specimen resembles half of a nut shell. It has a coat of limonite on what appears to be a fine-grained black iron ore (very hard). Part of a fossil is attached in the otherwise hollow center.
9. *Sphalerite* (black jack). Single, rather poor, apparently contact specimen. Coarse xline mass, having flecks of characteristtic resinous brown color.
10. *Epidote.* Single specimen. Greyish apple-green. Compact, hard. (Should also be serpentine, olivine, calcite and sard).

FOSSILS

1. "Sun-flower coral" (receptaculites oweni.) A fossil sponge. Common.
2. "Chain-coral" (halysites). One specimen.
3. *"Horn coral"* (zaphrentis calcareformis?) Horn shape; top concave with mushroom like ridges.
4. "Cup coral" (heliophyllum halli?) Similar to above but shorter and thicker in its proportions.
5. ???? coral (possibly favosites helderbergiae). Mass with pits.
6. ???? coral (possibly synaptophyllum). Small radiated circle on top, section like a ladder. Not in colony.

7. "Honey comb coral" (favosites). Weathered fragments. Sometimes in chalcedony.
8. Bryozoan? (possibly constellaria). Small pits in chalcedony.
9. Bryozoan? (possibly conularia undulata). Like frustrum of tall narrow pyramid.
10. Byozoan (montrypella?). Branched structure in shaly limestone. Y shape conspicuous in branches.
11. Cephalopod? (possibly triptoceras lambi) in white chert. Long parallel ridges.
12. Cephalopod (protocycloceras lamarcki). Circular top. Cross section long narrow cylinder with ridges.
13. Cephalopod? Trilobite? Specimen about 1" diameter flattened cylinder about 2" long with parallel rings. Resembles central part of trilobite isotelus.
14. Gastropod (raphistoma). Single specimen. Cast in dolomite.
15. Brachiopods or pelecypods unidentifed. Ridged and plain shells.
16. Pipe-stems.

(Should be additional corals and other forms including trilobites.)

BIBLIOGRAPHY

Illinois State Geological Survey Bulletins as follows: by Trowbridge, Shaw, and Schockel

No. 26. *Geology and Geography of Galena and Elizabeth Quadrangle*

No. 39. *Environment of Camp Grant* by Salisbury and Barrows
Extract C from No. 43. *Geological and Mineral Resources of the Kings Quadrangle* by Bretz

New York State Museum as follows:
Handbook of Paleontology for Beginners and Amateurs by Goldring
Part I. The Fossils
Part II. The Formations

Fieldbook of Common Rocks and Minerals by Loomis

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RESEARCH CORPORATION OFFERS $2,500,000 FOR POSTWAR COLLEGIATE RESEARCH

Scientists who made the atomic bomb, radar, and a host of other vital war weapons will have a chance to return promptly to college laboratories for scientific research and teaching through $2,500,000 in grants offered to educational institutions by Research Corporation, of New York, a non-profit organization devoted to advancing research and technology by use of revenues from inventions assigned to it by public-spirited inventors.

Help for Smaller Colleges

Preference in making these grants will be given, other factors being equal, to smaller institutions and those of more limited financial resources for research.

The five-year program announced by Dr. Joseph W. Barker, acting president, who has returned to his duties with the Corporation and with Columbia University from service as Special Assistant to the Secretary of the Navy, will result in 100 to 200 grants of $2,500 to $5,000 each year in order that talented young scientists, engaged for the most part in war research in uniform or as civilians, will be able to undertake at universities and colleges research of peace-time importance in pure science, especially chemistry, physics, mathematics and engineering.

Grants Begin Soon

The first grants will be made in a few weeks by a special committee of eminent scientists from industrial and university laboratories. The committee is composed of Acting President Barker who is also Dean of Engineering at Columbia University; Dr. Thomas H. Chilton, director of engineering for duPont; Dr. William D. Coolidge, X-ray consultant for General Electric Co.; Timothy E. Shea, manufacturing engineer of Western Electric Co.; Dr. Lloyd P. Smith, associate research director of Radio Corporation of America; Col. Stafford L. Warren, Professor of Medicine at the University of Rochester; and Dr. Robert R. Williams inventor of synthesis of vitamin B1 and coordinator of research of Research Corporation.

Grants will be made to the institutions at which the scientists will work and teach. The funds allotted will be available for the purchase of needed equipment and for employment of assistants either as Fellows or otherwise. Awards will be based primarily upon the demonstrated ability of the men who will conduct the researches and contribute to the teaching program of the school.

Scientists For Next Generation

"For the past four or five years," said Dr. Barker, "the Government, through the Office of Scientific Research and Development, the National Defense Research Council, the Army, the Navy, and the Air Force, has supported a vast research and development program into which has been drawn the great majority of the most competent university research men. Already the demobilization of these research projects is under way. When their war jobs are finished many of these talented young scientists should be going back to college laboratories and lecture rooms to train and inspire the next generation of science.

"War conditions have greatly disturbed our educational institutions by diversion of talented members of their faculties into war research, by drawing off faculty and students into military service, by utilizing educational facilities for military service training programs and by interrupting sources of financial support.

"Research budgets have been drastically curtailed, especially in the smaller institutions, which in many cases have not had opportunity to undertake Government research on a substantial scale. The financial strength of many institutions also has been impaired by the depression and the war conditions which followed. Now new burdens are thrust upon them as young men from the services return to resume their interrupted training.

Return to Peace-Time Footing

"Research Corporation's program of special postwar grants will round out the plans that are being made for the most effective and most prompt return of the war-engaged scientists to peace-time fundamental and applied research," Dr. Barker explained. "The Rockfeller Foundation has already announced a comprehensive plan of pre-doctoral fellowships which will return to college former graduate students who left their studies and researches for war research. Current government legislation and proposed bills being considered by Congress will aid the return to college of students whose scientific and technological education was interrupted by the war. Research Corporation grants will assist colleges in building research-minded staffs which will help train the students returning to colleges from the war, as well as the future contingents of students from our secondary schools in future years."

The grants are made possible by the fact that during the war years research programs that would be normally supported by Research Corporation grants have been laid aside in order to free men and facilities for war research.

Grants Made From Patent Revenues

Research Corporation was begun in 1912 with the gift, through Dr. F. G. Cottrell, of patent rights on electrical precipitation, which is used for removing dust, fume and mists from industrial gases and from the atmosphere. From revenues derived from these and other patents it has made grants of $1,279,637 in past years to 52 institutions. In recent years Research Corporation has served universities by administering inventions that may arise in their laboratories.

To scientists of the Office of Scientific Research and Development, Army, Navy and other war research agencies, the possibilities of these grants are being made known with an invitation to send applications to Dr. Robert R. Williams, Research Corporation, 405 Lexington Avenue, New York 17, N. Y.

AGATES FROM BOLSON de MAPIMI, MEXICO

By J. C. ESTLACK
Clarendon, Texas

In his many trips to Mexico, the writer has found one place, the Bolson de Mapimi, where exists the greatest aggregation of paleobotany and marine fossil invertebrates, agatized, that he has ever seen in all of his forty-four years of rock collecting. This material has been infiltrated with many colors and hues. It represents designs in flower moss and whorls galore.

The Bolson de Mapimi is a great arid depression in northern Mexico lying in three states, Chihuahua, Coahuila, and Durango. Nearer the southwestern portion of the region are three large playas lakes. The Nazas River flows into the middle lake, if and when it rains.

Strange as it may seem, the region is a goat country. The hardy Mexican goats feed on the oasis portions of the Bolson. The natives have several small villages scattered over the desolate area but are a friendly folk despite apparent hardships which they refuse to recognize.

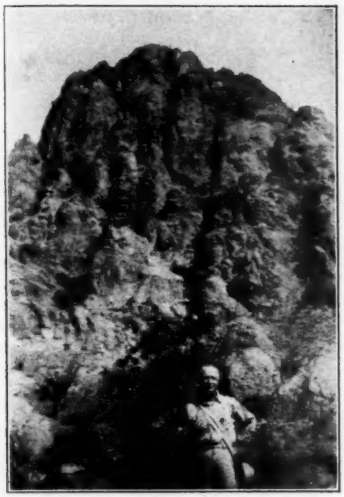
Reef in the distance is made up largely of algae and coral. This is the type location where the best agate is to be found in Mexico. The author is shown in the picture which he took by means of a string and his left hand.

To reach the Bolson de Mapimi, one should cross the Rio Grande at Eagle Pass, Texas, and go southwest (on Mex. 81) about 50 miles to Allende. The road is fair to Allende and passable to El Macho (25 miles to the west) from which point the journey must be made by burro pack some 120 miles to the southwest through a rough country to the edge of the Bolson. Sierra Majada, Jimenez and Mapimi should be visited because the country in between is rich with gem stone material.

In the flat Bolson area, one may select reefs and domes according to what is desired in the way of gem material, not overlooking the diabase and pegmatite dikes. Much of the material is metamorphosed near the dikes and is of the best quality. That farther back is inclined to be porous.

Great domes have eroded down showing Cambrian and Silurian reef sections of cryptozoan proliferum, while Ordovician reefs contain Cryptogamia Pteridophyta and Bryophyta much of it altered to beautifully colored agate. Scientists tell us that some of these forms evoluted into the fern, cycad and some of the trees as we know them today. Quien sabe? And that this ancient fossilized plant-animal existed more than six hundred million years ago!

Diabase dikes are noted where hornblende has been altered to epidote in large quantities. Pegmatite dikes display schists of quartz, biotite, muscovite and garnet. Many forms of plant-animal objects are noted in Silurian rhyolite flows. Also is seen dendritic opal in a strata four inches in width that appears to have been a form of plasma before being transformed into agate and opal. A curiosity is a small hill on the top of the large near island in the middle of the Bolson. Here was found the only pyrope garnet eroding from a bluish felsitic rock, the garnet being in pebble form well rounded.



Showing core of an eroded dome in the Bolson de Mapimi area. The top of this granitoid schist is approx. 9,000 feet above sea level.

The author is in the foreground. Picture was taken in the same way as was the other one.

Some eighty miles from water, but near a playas lake area, is to be seen the ancient campground of the dusky children of the desert of the most ancient type since they used no pottery, selected the most beautiful agate, flint and obsidian from which to fashion crude artifacts. Under cliffs nearby were found indications of a permanent abode of the Basket Weavers Nos. 1 and 2. Aside from the usual cotton and reed material remnants, a dark amber-colored material was found at their burial site that looked like a residue from distilled plant life. It did not fade or become brittle through the ages even though exposed to the sun. This simple bit of testimony of an ancient habitat intrigued the writer. A sample is being sent to Mr. Peter Zodac. Perhaps he can tell us what it is. or can find some one who can. The material abounds only near the burial places. and was not used for making beads or other ornaments.

For miles upon miles there is a never ending delight for the gem collector if one knows a bit of geology in order to select the desired locations without too much walking. Nature begrudingly gives up her secrets in Mexico the same as any other place.

In Colorado it is said the tall pines kiss the stars and tickle the angels' feet. If that be true, the granitoid schists of Mexico sweep from the Milky Way the stars that fall as gem stones in the Bolson de Mapimi.

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Quartz Pebbles From the Philippines

On the northern outskirts of Zamboanga, a city on the extreme southwestern tip of the island of Mindanao, the second largest island of the Philippine group, interesting quartz pebbles are quite common. Two of the most interesting are chalcedony and jasper. The chalcedony is grayish in color, the jaspers are reddish which often are mottled with bluish and white. These pebbles can take a beautiful polish.

On the beach at Zamboanga, dark brown cat-eyes are common. Cat-eyes are of marine origin and because they can take a beautiful polish are eagerly sought by our fighting men.

Sgt. Ken Pugsley, of Pawling, N. Y., a member of the R. & M. A., collected the above while stationed on the island; he has recently been discharged from the Army and is residing again at home.

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Bigham and Bingham Mines, Penn.

A number of inquiries have been received regarding the correct name of the old abandoned copper mine in Adams Co., Penn., from which attractive specimens have enriched many collections. The minerals are labeled as coming from the Bigham mine. There are a number of abandoned copper mines in Adams County and two of them are the Bigham and the Bingham. It is from the former mine from which the attractive specimens are now coming out — all collected from the dump.

AN AMERICAN SOLDIER VISITS SOLFATARA, ITALY

By ANTHONY W. THURSTON
Swansea, Massachusetts

Shortly before leaving Italy I had the opportunity to visit the Volcano of Solfatara situated about 4 miles from Naples, and perhaps the readers of *Rocks and Minerals* would be interested in an account of it.

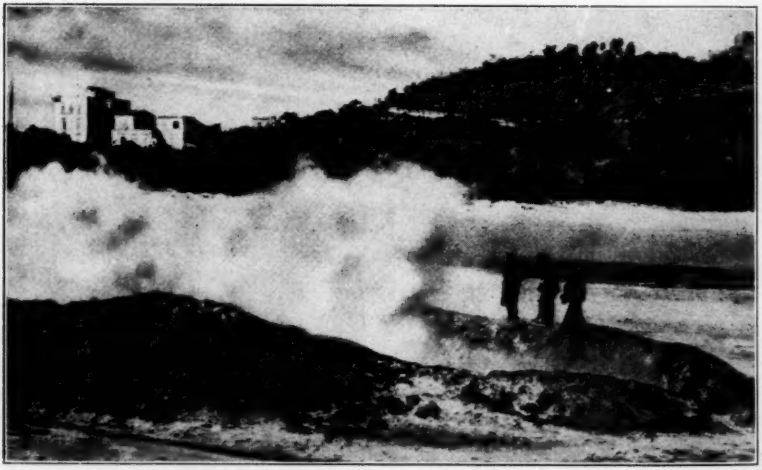
The Solfatara (Sulphur Earth) volcano is situated about 4 miles up to Italian coast from Naples, near the little town of Pozzuoli (Pot-soo-oli) and is probably the most interesting example of vulcanism in Italy. Although it is not as well known as Vesuvius, it is much easier to reach, and the actions taking place within the crater can be observed at close range.

The volcano erupted in 1198 for the first time, burying a Roman amphitheater under mud and ash, then it subsided to its present dormant condition.

We entered the crater through a broken place in the rim, and walked down a gravel path to a level floor, which covers about 10 acres. From here we could see clouds of steam, charged with sulphuric acid, coming out of the ground at many points, but as we walked along it soon became obvious that the ground was much like a large sponge, with thousands of tiny crevices giving off steam. And when we walked across certain areas there was a muffled echo of our footsteps coming from the earth, as though it were completely hollow. At one place there is a large hole about 4 or 5 inches in diameter from which the hot gasses escaped with a roar, tossing pebbles as large as eggs into the air. At another place there was a small cave, and by keeping as low as possible we found that we could crawl under the suffocating sulphur fumes. The temperature here was around 110°, and it was impossible to remain inside for long, but it was well worth the heat for we saw the rare monoclinic sulphur crystals forming on the roof. However they were much too delecate for any samples to be taken.

In the center of the crater one can look down into a pit of boiling mud about 30 feet long and 10 feet wide, which is said to have been the inspiration for Dante's Inferno.

The Solfatara is noted for a number of minerals among which the following may sometimes be seen in collections:



The famous mud pit of the Solfatara Volcano, near Naples, Italy.

Arsenschwefel: A blue-gray crystalline mineral occurring mixed with realgar.
Arsensulfurite: An arsenical sulfur occurring in brownish-red crusts.
Halotrichite: As whitish, silky fibrous crusts.
Opal (Fiorite or Pearl Sinter): Occurs in tufa in botryoidal, globular and stalactitic masses, pearly in luster.
Orpiment: As crusts and minute crystals, yellow in color.
Realgar: As crusts and minute crystals, red in color.
Sulfur: As crusts, masses, and crystals, yellow in color.

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Now a Word About Mt. Vesuvius

Since the 1943 eruption it is no longer the beautiful cone of the picture post cards, only an ugly, ash covered mountain. And the volcanic neck has been closed so tightly by the material which fell back into the crater, that it is from all appearances dead.

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A ROCKHOUND IN COSTA RICA

By ROBERT REX

I am one of the many Rockhounds who are members of the R. & M. A. Although I am only 16 years old, I have been collecting minerals for 8 years. Almost all of my previous rock hunting has been in the pegmatite region of Bedford, N. Y., the zeolite region of Paterson, N. J., and the Willsboro region of New York.

Last spring I moved, with my parents, to Costa Rica, which is in Central America. I will finish my high school here and then return to the States to go to college where I intend to major in geology.

Costa Rica is a very interesting country because it is so new, geologically speaking. There are more than seven semi-active volcanoes in the country which are quite interesting to visit.

In this country, when you want nice mineral specimens and in good condition you like as not look in one of the many swift-flowing rivers or at their mouths where they empty into the sea. There are a number of reasons for this but the principal ones are that the rains are so torrential that the rocks which are washed loose are carried off quickly to the sea — along the banks of these streams some very beautiful geodes may often be picked up. I have seen a velvety-blue chalcedony geode in school that one of the students picked up. I have found one small geode containing quartz crystals embedded in yellow jasper. At one place on the Pacific coast, called Mata Limon (not on any map but only a railroad stop) there is a small stream in which I have found a lot of red and yellow jasper, some drusy quartz, the above mentioned geode, masses of chalcedony, and volcanic bombs. A little further north on the coast there is a cliff that has a vertical band 20 feet wide of fossil shells in brown shale (almost fine sandstone).

In the Mesta Central, a valley in the center of the country almost surrounded by mountains and volcanoes, lie almost all of the important cities, including the capital, San Jose, where I live. A little to the east, in the next valley, lie deposits of lignite which aren't used because of their high sulfur content. This valley contains many hot springs. Above the bathhouse at one of these hot springs, at Aguas Calientes, there is an outcropping of limestone. In this limestone are a lot of nice quartz crystals whose size ranges from a fraction of an inch up to two inches long.

I have been promised a trip, in the dry season, to the gold mines of San Ramon, from which have come some large and beautiful quartz crystals. It is a two-day trip.

Due to a six-day school week I haven't been able to put in as much time in rock hunting as I would like but I expect to have lots of fun during the dry season vacation.

FIELD OPERATION OF ALTERNATING CURRENT EQUIPMENT

By RONALD L. IVES

ABSTRACT

Alternating current mineralogical equipment, such as fluorescent lamps and geiger counters, can be operated in the field, from batteries, by use of inverters, vibrapacks, and motor generators.

INTRODUCTION

Many mineralogists and geologists, possessing high grade fluorescent and radiation equipment, are unable to use it in the field because the equipment is designed for operation either from 110 volt 60 cycle current, or high voltage power supplies.

Recently developed radio equipment, designed to produce alternating current, or high voltage direct current, from the standard six volt storage battery, makes possible use of "laboratory" mineralogical instruments in the field.

INVERTERS

Where an alternating current output not exceeding 75 watts is desired in the field, it can be supplied by a standard inverter, operated from a six volt storage battery, such as a car battery. The inverter consists of a tuned vibrator, connected as a reversing switch; and a transformer. In operation, the direct current is converted to alternating current by the vibrator, then stepped up to the desired voltage by the transformer.

Field experience with inverters of the better grades shows that their frequency is remarkably constant; their output at their factory rating is equally satisfactory; and their wave form is good enough for use with ordinary commercial A. C. equipment.

Inverters of about 75 watt capacity cost about $15.00 (professional prices), last for more than 1,000 hours of continuous operation when used with reasonable care, can stand heavy momentary overloads (at a decrease in service life), and are rugged enough to stand field use. The only item likely to fail is the vibrator, which is a replaceable "plug in" component.

By use of inverters, the smaller fluorescent lamps, small soldering irons, "Handee" grinders, Geiger counters, and field pattern devices, can be used in the field.

It should be remembered that the output of the inverter is drawn from the battery, so that, when an inverter is connected to a car battery, it is best to keep the motor running, to prevent discharging the battery too fast. When much work is to be done in the field, a larger generator, of the "prowl car" type, should be substituted for the car generator.

Good dependable inverters are made by several manufacturers, such as Mallory and A. T. R. In general, all inverters having the same I. R. E. specifications not only perform identically, but cost about the same. Purchase of a "cut price" inverter is not an economy.

VIBRAPACKS

Where a high voltage direct current is desired in the field, for supplying the plate voltage of an amplifier, or the charging voltages in electrostatic equipment, a Vibrapack can be used. This consists of a vibrator, connected as a reversing switch; a transformer; and a rectifier, sometimes another vibrator mechanically coupled to the first.

In operation, the direct current supplied by the battery is converted to alternating current by the vibrator, stepped up to the desired value by the transformer, reconverted to (interrupted) direct current by the rectifier, and then filtered, so that the output is relatively pure direct current at the desired high voltage. Vibrapacks cost, and perform, about the same as inverters, and are, in general, made by the same manufacturers.

When operating equipment originally designed for A. C. in the field, it is sometimes desirable to reconnect the filament circuits for direct operation from the battery. This, usually, can be done by any competent radio repairman.

MOTOR GENERATORS

Where alternating currents of relatively high power, or direct currents of over 100 watts, are desired in the field, a motor generator, operated from a storage

battery, is the most economical source of supply.

This device consists of a motor of the desired power, wound to operate from the car battery; and a generator, wound for the desired output, driven by the motor. Multiple windings in the generator are possible, to supply a number of different outputs.

Motor generators are, in general, somewhat more costly than inverters or vibrapacks, but have a longer useful life. There are very few "bargains" in motor generators — the cheap ones don't last.

APPLICATIONS

Although it is customary to limit field activities to areas accessible by motor vehicles, several "back pack" fluorescent lamp and geiger counter assemblies, using inverters or vibrapacks, and a storage battery for power supply have given satisfactory results.

For field radioactivity determinations, a portable geiger counter, complete with power supplies, can be constructed. A good sensitive counter weighs about 60 pounds, including battery, so that the operator, when carrying it, and wearing a protective suit (leaded rubber) is very heavily loaded.

For less complicated purposes, such as fluorescence tests of relatively low power, less weighty field equipment can be made, and easy portability is assured.

CONCLUSIONS

Use of inverters, vibrapacks, and motor generators makes possible use in the field of mineralogical equipment designed for use on 110 volt 60 cycle current, in areas where such current is not easily available.

Costs and weights of power supply equipment, for low powers, are not excessive. When power needs exceed 100 watts, costs and weight mount up, making the equipment semi-portable, rather than truly portable.

Field experience with the power conversion equipment outlined above indicates that items of good manufacture perform up to, or a little better than, their I. R. E. ratings; and that bargain type equipment, sold at cut prices, is no bargain.

Uranium Deposits Found in Brazil

RIO DE JANEIRO—Uranium, source of harnessed atomic energy and key mineral in the construction of the atom bomb, has been found in Brazil.

This news was made public at a recent meeting of the Brazilian Academy of Sciences, where it was announced that Brazil's scientists and minerologists have uncovered proof of the existence of uranium deposits in the states of Minas Gerais and Paraiba.

The Academy further disclosed that it is requesting the Brazilian government to allocate funds for instituting intensified research to determine in what quantities uranium is present in Brazil.

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Perkiomen Copper Mine

One of the old abandoned mines of southeastern Pennsylvania which may be of some interest to a collector is the Perkiomen copper mine ½ mile northwest of Audubon, in southern Montgomery County. Audubon, a small hamlet, is 5 milest west of Norristown.

To reach the locality, take U. S. 422 out of Norristown, heading for Pottstown to the northwest. At Jeffersonville, 2½ miles away, turn left for Audubon (2½ miles away and Oaks Sta., 1 mile further). About ½ mile from Audubon, on the road to Oaks Sta., is Mine Run, a small stream about 10 feet wide which is spanned by a stone bridge. The Perkiomen Mine is on the north bank of Mine Run and 600 feet to the right of the road. The old dump, which is visible from the road, runs right down into the stream. The old shaft at the mine has been obliterated but a number of small pits are present. The dump contains lots of earthy limonite but with care azurite, chalcopyrite, malachite and other minerals, for which the old mine was famous, might be found.

Another old copper mine, the Ecton, lies 500 feet to the left of the road and on the south bank of Mine Run.

Perkiomen Creek, spanned by a 500 foot long concrete bridge, is 1,000 feet further on from Mine Run towards Oaks Sta.

"ME AND PA." TWO OLD ROCKHOUNDS

Dear Editor:

I can always tell when Pa has something of importance to give out because he makes a move to attract my attention then he lets me wait for a few minutes to make it more impressive. While he caressed a large slab of carnelian agate from Brazil that he had purchased from Warner and Grieger of Pasadena, Calif., he kept glancing at me over the rim of his specks to see if he still had my attention then he spoke up.

"Do you know, Ma, if I could always get material any where near as good as I get from Warner and Greiger I would never have any kick coming but what can be done about the times we answer glowing ads to get so heavily disappointed with almost worthless trash!" Here Pa sputtered a bit and then picked up a perfect Quartz Crystal that he received from J. L. Davis of Hot Springs, Arkansas, and cuddled it up like a favorite pet. After a few passes of hand buffing on that crystal he paused in his work and I realized that he was about to say what was on his mind and it came.

"Say Ma, mineral clubs in every locality should have a "Better Business Bureau" or "Grand Jury" or something of that nature in order to protect rockhounds from fly-by-night would-be-dealers who spoil the business that should be kept clean. Besides it becomes a costly affair to get stung a few times answering ads that look promising. Of course good Editors strive to protect their subscribers but it is beyond their scope to know what is going on without the reports that occasionally may come through about what new dealers are putting out in comparison to what they offer. Take for instance that fellow who advertised "Agatized and Opalized Wood from central Oregon." I received one small piece that *was* Opalized and the rest was worthless trash and no relation to Agate unless it may have had some silica in its composition but it was so crumbly it was not even quartz. What are we to consider as Agate if it is not more or less translucent? For years I have heard that Agate was a colored translucent Chalcedony. Now I have a lot of material that was sold as agatized wood, from the above mentioned ad, and it is as opaque as the kitchen stove and it crumbles like rotten sandstone.

"Another dealer (?) offers "true onyx and the lines of said onyx are as wavy as the tail of a healthy young pig in clover.

"One of the old Manuals of Dana's gave Onyx as "A kind of agate having the colors in flat horizontal layers."

"I personally visited an Editor in one of the Western States and complained about the deal I received from one of his advertisers and he simply laughed it off. Said he, "We have to be a little lenient with people and not hold them strictly to the line of technicalities" or words to that effect and that was enough to set me off in a huff. Now I want to know if there is not some way where the line can be drawn when we purchasers are concerned. Is it not possible to be able to keep away from getting Limonite when one thinks he is buying Agate? What is the answer? Is the fault with the Editor who will accept any ads (from the money angle) and let the saps pay for the fun of getting free with the classifications of minerals? Sure thing! "Pa exploded, "one is permitted to return and get your money back and then you are out postage both ways and the same lot will be shipped to another sucker!"

I believe Pa would have raved all night had he not spied a piece of Texas Agate he had bought while visiting A. L. Jarvis of Watsonville, Calif., for he sure appreciates the material he secured from those folks. Sincerely,

Me, of the Two Old Rockhounds.

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Rock Crystals at Catasauqua, Penn.

Catasauqua is a little village in eastern Lehigh County of eastern Pennsylvania. In the fields, near the water works, doubly terminated rock crystals, some two inches long, may be found loose in the ground. Some of the crystals contain phantoms.

CUTTING MINIATURES

By LUCILLE SANGER

Although not many people collect miniatures compared to the number who collect other items, miniatures seldom fail to attract admiration and interest wherever exhibited. For the lapidarist who has a soft spot for the Lilliputs, here are a few suggestions for cutting some fruits and vegetables to be used for ornaments in the display or to be worn.

In making the articles mentioned here, the only grinders used are the regular lapidary wheels, coarse and fine. Fruits may be made of any material so long as they are made to look as natural as possible. For instance, a charming little apple was made of dark petrified wood with a small red stainlike mark on one side. In making vegetables, however, it is better to choose a material as nearly the natural color as possible.

These items, may of course, be made as large as desired, but for use in costume jewelry, they should be kept to about one-half or three-fourths of an inch except in the case of half fruits.

Select the material, cut it into cubes or rectangles, and shape as much as possible on the coarse wheel and finish on the fine wheel. The only carborundum cloth needed is 220 grit, the new to be used first and old pieces in various stages of wear for finishing. For the handwork (and there will be quite a bit of it) small squares of carborundum cloth should be stiffened by wetting the backs, weighting down the corners and letting dry overnight.

The holes drilled in these miniatures will be too small to hold a twisted wire, so the wire used for the stems will have to be nicked with a file or pliers to make it hold more firmly in the cement. Stems and leaves should be carefully proportioned to the size of the gem.

"Apple" Miniatures

Round out a cube on the coarse wheel until a rough sphere is formed. Finish on the fine wheel. If there is to be a crease up one side of the apple as there is in some species of the fruit, make this on the sharp edge of the wheel. When it is finished on the grinding wheels, fold a piece of the carborundum cloth into quarters. This makes one corner where all the folds are. Use this as a tool to work out the depressions in the blossom and stem ends. Many corners will have to be folded before the work is finished. After the ends are finished, hand sand and then mount on a dop stick and use the sander.

Drill a hole in the stem end. Cut a piece of sterling wire of a gauge consistent with the size of the apple. The wire must be long enough so that there will be a length for the stem after one end has been melted into a ball. Hammer the ball flat and file and on the lead or pitch block shape it into an apple leaf. Solder the leaf to a piece of wire to be used for the stem. There is now a stem for the fruit which has attached to it a leaf and the stem of the leaf. Nick the end of the stem and cement it into the apple after soldering and pickling and polishing. This makes an ornament for the display cabinet.

To hang an apple on a charm chain, solder a leaf made as directed above, to a piece of wire. Pickle and polish. Cement the main stem into the apple and loop the top end of the long stem into the chain, and with a pair of pliers, bend the end around through the chain until it touches itself.

To make a lapel pin, make an apple nearly an inch in diameter. Take a piece of heavy wire and shape the ends to resemble a limb. Solder the joint and catch to the under side of this. Now solder on the apple stem and leaf. Pickle and polish. Cement the stem into the apple. Arrange the stem and leaves so that they will hang naturally.

To make a brooch or lapel pin of half an apple, make the apple larger. Use a mounting with prongs instead of the regular bezel. Solder a leaf and stem to the top of the mounting. Solder a joint and catch to the back. Pickle and polish.

Fasten the half apple into place with the prongs. Bend the stem and leaf to look as if it were growing from the top of the apple.

Another type of brooch and lapel pin may be made from the half apple. Drill a hole in the back of the apple near the stem end. This is for cementing the stem with the attached leaf. Drill two holes in the back of the fruit to hold the joint and catch. There are two types of these which can be used here. One is made of common metal and comes either with or without a safety catch. The joint and catch are soldered to a bar. The bar has a bit of metal punched through on two sides. These little angles are then bent to the back of the pin and are meant to be pushed into wood when making wooden pins. However, for this type of pin, they are cemented into the holes drilled in the back of the fruit. It is a good idea, when using these, to put some good cement on the bar as this holds the pin with additional safety to the stone.

For the one who is lucky enough to have a sterling joint and catch, solder a wire to the bottom of each piece. Either hard or soft solder will do. Cut the wires to the proper lengths, and, after nicking, cement into the drilled holes.

Earrings may be made in the same way as the pin, except that, instead of fastening on a joint and catch, the mounting is soft soldered to the ear screw. Pickle and polish and set the half apple in place. To make earrings of the whole fruit, make the apple the same as for a cabinet piece. Soft solder the stem to the ear screw. Pickle and polish and then cement the apple to the stem. Bend the leaf over to hide the ear screw.

A bracelet can be made of links of half apples. The links should be made of mountings with prongs as described above. Each stem and leaf should be soldered to the mounting, and, when the apple is fastened into the prongs, the leaf and stem are bent slightly forward to look as if they were growing from the apple. After the stem and leaf are soldered to the mounting, solder a ring to each side of it. Assemble the mountings with oval links and add the fastener. Pickle, polish and mount the gems.

"Carrot" Miniatures

These should be made of any stone approximating the carrot color. There is a plain orange or orange-red jasper which is a good material. Oregon carnelian agate is good and also some clear carnelians or "red" agates which have a reddish-yellow color.

Cut a rectangle, the four long sides the same width. Shape into a corrot on the coarse wheel and finish on the fine. The horizontal creases which go around the real carrots can be made by the edge of the fine wheel. A carrot may be made as smooth as desired or as rugged as the skill of the worker permits.

Fold a piece of the carborundum cloth once and use the crease to work up and finish the ridges and creases in the carrot. Hand sand and then mount on a dop stick and shine up the high places on the electric sander. Care must be taken, however, to see that the sander does not leave sharp edges at the creases instead of the soft round curves worked up by hand. Drill a large hole at the top for the insertion of the stems.

If a large carrot is being made, use a suitable green stone for the stems, such as jade or vesuvianite. These should all be the same length and look as if they had been cut off with a sharp knife. They will have to be small. Polish and insert into drilling. However, if the carrot is only a half inch or so, tiny silver wires should be used. Not more than three. This method makes a cabinet specimen.

To make earrings, soft solder a small piece of wire into the center of the ear screw. If the earring were on the ear, this little piece of wire would run parallel with the nose. Now drill a hole in the back of the carrot and cement onto the small piece of wire in the earring. Carrots for earrings should not be over half an inch in length.

For buttons, make the carrot in the same way. Drill a hole in the back. Put a short piece of wire around the small end of a round pliers and bring the ends together. Now twist them together with another plier. Cut the ends of the twisted wire so they will be even and smooth. This makes a round loop with a twisted

wire stem. Cement this stem in the hole in the back of the carrot. The button is sewed to the garment by means of this loop.

A lapel pin can be made of either a whole carrot or a half. Use the method given for making a pin of half an apple.

"Grape" Miniatures

The ideal material for grapes is, of course, amethyst. Light green onyx and pale green jade are also good materials. Onyx has the added attraction of being easy to drill. A small steel drill used for woodworking will drill carbonate onyx very rapidly.

When making a bunch of grapes, it is well to remember that the grapes at the bottom of the cluster are smaller than those at the top. Cut cubes larger than the finished grapes will be. After the grapes are ground and polished, drill them at the top.

This stem recipe is for the daring and intrepid silversmith with a strong constitution and a reckless disposition. Take a suitable gauge wire for the central stem. Solder onto it the smaller stems. Shape the top of the large stem and solder on leaves which have been sawed out and shaped on the pitch block. Pickle. The polishing will have to be mainly handwork. When the stem is ready, cement on the grapes and bend to a natural looking shape.

Here is a recipe for the more timid soul. Drill the grapes and set them with suitable gauge wires for stems. The smaller grapes at the bottom of the cluster will have the longest stems. When the stems are firmly set, take the grapes at the bottom of the bunch in your left hand (if you are right handed). Straighten out the stems. Adding a grape at a time with the right hand, twist the wires together. When all the grapes are added, twist the top of the stems tightly together, using pliers. Fasten the stem and leaves to the central twisted stem with the pliers. Bend the leaves to cover the top of the stem.

Another method of assembling the grapes, and probably more suitable for the amateur, is to use the method of assembling on separate wires, but instead of using sterling wire, using milliner's wire. This wire is covered. If it can be secured, the kind which is covered by being wrapped with green thread is better. This wire is easier to handle than the sterling. Finish as in the second method given. These methods will produce cabinet pieces.

Tiny clusters of grapes make beautiful earrings. Finish and assemble the bunch completely. Soft solder a small piece of wire to the center of the ear screw. Pickle and polish. Use this small wire to slip around the central stem. Bend down tightly with pliers. Now bend the leaf to cover the top. They are now ready to wear.

To make a lapel pin, do not make the bunch rounded, but rather flat on the under side. If method number one is used, solder a silver bar to the under side of the top of the stem and then put on the joint and catch. Add the leaves. Pickle and polish. Cement on the grapes.

If method number two is used, soft solder a bar with joint and catch attached, to the under side of the stems. Now attach the stem. Clean and polish.

If method number three is used, proceed the same as for two, but before soldering on the pin bar, be sure to remove the wrappings from the milliner's wire and clean it thoroughly. If this is not done, the solder will not adhere.

A cluster of grapes can be used for a pendant. For a tall slender person, three clusters can be used, the two side ones being smaller than the center one.

"Pear" Miniatures

Light green or pale yellow onyx, light green common opal, light red Brazilian agate or pale carnelian are fine materials for pears.

Shape the pear roughly on the coarse wheel. To get the "pear" shape, work the middle back and forth gently on the edge of the wheel.

Finish on the fine wheel. Use the folded corner of the carborundum cloth to work out the blossom and stem ends. Wrap a piece of the carborundum cloth around a dop stick of suitable size and make the middle of the pear smooth and even. Hand sand the whole and work up the highlights on the disk sander. Polish. Drill the stem end and attach a leaf and

stem in the same manner as for the apple. This makes a display piece.

Earrings, lapel pins, clips and bracelets are made the same as the apple items.

"Cherry" Miniatures

Synthetic ruby, light green onyx, and agate in shades of red are some interesting materials for making cherries. They are made in the same way as the grapes, except that all the cherries in each cluster should be the same size. Each cherry has its own stem and are in bunches of three. Cut the stems and solder together at one end. Solder this end to a stem and leaves. Pickle and polish. Cement on the drilled cherries. This makes a cabinet specimen.

To make a lapel pin, make the stem heavier and fasten on a catch and joint as in the whole apple lapel pin. Pickle and polish. Cement on the cherries and bend the stem gracefully at the top of the piece.

For earrings, solder the three stems together at one end. Then solder them to a short stem. Add a leaf. Soft solder the stem to the ear screw. Pickle and polish. Cement on the cherries.

"Banana" Miniatures

Choose a material such as a yellow jasper. True yellows in gem stones are rare, so there will not be much choice for a ripe banana color.

Cut a rectangle with the four parallel sides of equal width. Shape three sides roughly. One of these sides will be the inside curve of the banana. To make the inside curve, work the fourth edge gently back and forth over the edge of the wheel. Work out as much as possible. Now finish on the fine wheel, also going over the inside curve. The resulting curve will be very ragged and bumpy. Put a piece of the 220 carborundum cloth over a suitable sized dop stick and work out the inside curve. Sand and polish. This makes a cabinet piece.

For earrings, use in the round and drill a hole in the back. Soft solder a short wire to the ear screw. Pickle and polish. Cement the banana to the wire.

Make buttons in the same manner described in making the carrot buttons.

A lapel pin can be made in the same manner as the unmounted apple pin.

"Cucumber" Miniatures

There will be no trouble in finding a suitable colored stone for this item. There are jaspers, jades and agates galore. Cut the cucumber the same as the banana. Finish with dop stick and carborundum. Sand and polish. If Wyoming green jade is used, little nodules, somewhat resembling those on a cucumber, can be made by polishing on the wood wheel with tripoli and then following with tin oxide on the rock hard felt. Cut and polish a stem. Drill the top of the cucumber and set the stem as in the carrot.

To make earrings, lapel pins and buttons, use the same method as given for the carrot and banana.

"Acorn" Miniatures

There will be no difficulty in finding excellent material for this item. Any of the brown woods or agates or jaspers are ideal. Cut a cube larger than the finished acorn is to be. Round out on the wheel. By holding the nut part flat against the wheel and turning it, the cap is formed. Finish shaping on the fine wheel. Fold a crease in a piece of carborundum cloth and shape the indentation at the stem and the bottom of the cap. The slight point at the bottom can be worked up with the cloth around a small dop stick. Sand and polish. Drill the stem end and set in either a stone stem or a wire one. The stone stem is better for a larger nut. This makes a cabinet piece.

Make earrings, lapel pins, charm and buttons using the same method as for the apple.

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Clinochlore From Brinton Quarries

The old abandoned iron mine at Tilly Foster, N. Y., is known for its fine clinochlore; another locality where fine crystals and plates of the dark greenish mica have been found are the old Brinton quarries near West Chester, Penn. Here the clinochlore has been found in talc and many loose crystals or plates found in collections contain traces of greenish, foliated talc attached to them.

West Chester is a small city in eastern Chester County, of S. E. Pennsylvania

BEAD DRILLING

By J. H. HOWARD

This is supplementing the paper by this writer in the November issue of this magazine. Further experiments have been most successful and enlightening. Since that paper was written certain tools which at that time were not available, have come back on the market and it is with the aid of these that superior results have been obtained.

It appears, at this stage of the experimenting, that almost the whole success or failure of the operation depends on speed. There was not much if any difference in behavior at speeds between 2000 — 5000 rpm. But much higher speeds have spectacular results. So the writer wants to offer the following revised description of tools and technique.

Some drilling machine such as that shown, with its reciprocating table, is still necessary. The speed of reciprocation should be increased somewhat — 100 strokes per minute is satisfactory.

It is difficult or impossible to get sufficient speed with a spindle such as that shown in the November paper. This spindle should be replaced with a high speed hand grinder such as the "Handee De Luxe" mounted vertically on a bench stand attached to the upright spindle posts. The essentials of the tool chosen are: it must have a good true chuck and a speed of about 25000 rmp. (twenty-five thousand).

The drill is to be a tube such as was described. It may be made in the die with the countersink at top, or in the die with the straight hole. In either case, do not expand the tube with a pointed tool. Insert the tube in the die. Cut it off so that it projects from the die about its own diameter. Hammer the end lightly so that the end is upset on both the inside and the outside of the tube wall. Red brass tube about 1/16" dia. is satisfactory; yellow brass is not so good.

Chuck the tube. True as much as possible by holding a stick against the side of the tube revolving at full speed. Complete the trueing by holding a file against the side of the upset end while the tube is revolving at full speed.

Cement the bead cube on the table and cement the funnel on top. Put in a liberal charge of diamond dust. A lump as large as a small pin head, of No. 0. (No. 1 will work but is slower). Fill the funnel with turpentine or kerosene.

Start the reciprocating mechanism and the spindle simultaneously, or, start the reciprocating mechanism first. Proceed to drill. Keep coolant in the funnel. If drilling slows down too much add another shot of diamond. Do not worry about the amount of diamond being used as it can be practically all recovered, and this is worth while.

The drill will sometimes go thru a ½" bead but it will not always do so. The drilling slows down as the depth of the hole increases and it probably pays to drill from both sides of a bead as much as 7/16" dia.

One half inch jade beads can be drilled by this scheme in from 6 to 10 minutes. The writer's initial batch of 15 beads was drilled in an average time of 8-1/3 minutes and he is sure this speed will be improved with further experience.

Prehnite First Found in South Africa

Prehnite is a calcium aluminum silicate, generally of a light green color. It is a common mineral in many basalts.

It was first found by Col. Prehn in 1779 near Cradock, Cape of Good Hope Province, South Africa. It was at first mistaken for a number of greenish minerals as chrysoprase and chrysolite but in 1790 Abraham G. Werner, the pioneer mineralogist, described it as a new mineral and named it prehnite, after the discoverer.

Cradock is a small village on the east bank of Fish River in the southeastern part of Cape of Good Hope Province. (commonly known as Cape Province.)

ESKIMO STONE CRAFT

By FRANK H. WASKEY
Aleknagik, Alaska

For unknown generations, the Eskimo of Northwest Alaska have utilized stone of various degrees of hardness and workability in their Arts and Crafts.

Oil Lamps and Stoves, knives, axes, adzes, drills, drill caps, and labarets were made from the harder stones.

Hematite, Limonite and Vivianite were among the pigments used in ornamenting and preserving their paddles, boathooks and most cleverly constructed wooden ware.

Lozenges and diamonds of Calcite were often inlaid along the rims of their wooden food and serving dishes.

The Jade from the Kobuk River Valley, notwithstanding the skill, ingenuity, and patience required in shaping and sharpening into axes, knives, and drill bits was a favorite for their cutting tools.

Some of the women's' semi-lune knives of this material will rank in beauty of line and color with anything from Man's past. And that takes in a lot of territory.

Until the early 1900s artifacts of this Nephrite, in color from milk white to jet black were easily to be purchased in the villages or dug from the Middens from Unalakleet to Point Barrow.

The source of much of this Jade has been known since the earliest explorations by Americans. It is difficult to find an old map of Alaska, which does not show the fabulous Jade Mountain, some thirty miles within the Arctic Circle and near W. Longitude 158°.

At various times since the great placer gold stampede of 1898, various individuals have spent much effort in attempting to create a demand for the Kobuk Jade among the manufacturing Jewelry trade.

The remarkable increase in the number of enthusiastic Amateur Iapidists during the past decade, plus skillful advertising has at last brought this beautiful stone into demand.

From a visit made to the region last summer by the writer and from investigations made by other and more competent observers, it is safe to predict that the quantity of this particular translucent gem material will be very small indeed as compared to the great amount of nephritic material which has been gathered along the Cosmos Hills and from Jade Mountain during the current year.

That there will be a limited amount of Gem material available soon from the Kobuk is in great part due to the interest displayed by that Dean of Amateur Artificers, J. L. Kraft, and the enterprise of James Robbins, Mining Engineer and operator of Candle and Kobuk, Alaska.

The work of Eskil Anderson as directed by B. D. Stewart, Commissioner of Mines for Alaska, has made available to the interested public, valuable information as to the several Jade occurrences in the Kobuk.

Major M. A. Marston, Military Aide to Governor Ernest Gruening of Alaska has done much to publicise the potentialities of these occurrencies.

The Governor's Office working with the Alaska Native Service has had a representative in the field in the person of Fred W. Forbusch, a professional lapidary. It is hoped that the present day Native Artisians, who work largely in Ivory, may develop an interest in working the more difficult Nephrite. Some of the softer Serpentine of the same localities also offers possibilities for tooling into objects of Art.

Renewed interest has arisen among the Eskimo of Kotzebue Sound and the Arctic Ocean in searching for Jade Artifacts among the many deserted villages of the Coast and Interior.

Some few adzes, amulets, knife sharpeners, etc., have come to light. Most of these are of too great value as specimens of a past culture to make advisable their recutting into modern Art.

But some of the unfinished artifacts, broken axe bits, etc., if of the desired colors and translucency will no doubt find their way to the cutting tables and laps of the "outside" Amateur.

And so to adorn my lady's person, or become one of the most interesting gems of the advanced Collector.

CLUB AND SOCIETY NOTES

Queens Mineral Society

A meeting of the Society was held on December 13, 1945, at its headquarters in Richmond Hill, N. Y. It was called to order at 8:15 p. m. There were 23 members and guests present.

Miss Ruth Grothur reported on the plans for the annual dinner.

Mr. Bernard Zettl brought in a lamp which he had made for the Society's' use.

Mr. Walter Helbig reported on his new class.

The trip to the Picker X-Ray Laboratory was called off indefinitely. In place of that trip Mr. and Mrs. Segeler and Mrs. Marcin spoke on collecting in Virginia and North Carolina. Many fine specimens were shown from these localities.

Mrs. Marcin suggested that the Secretary and the Treasurer be separate persons.

Election of officers was held. Mr. Curt Segeler was re-elected President, Dr. Otto Trautz was re-elected Vice-President, Miss Ruth Grothur was elected Secretary, and Mr. Theordore Fredericks was re-elected Treasurer.

The meeting adjourned at 10:15 p. m.

Respectfully submitted
Theodore Fredericks, Secretary

Junior Mineral Exchange

This is a mineral club for the younger collectors, with headquarters at Revere, Mass. Membership is open to anyone in the country who would like to correspond and trade with collectors 13 to 17 years of age. There are no dues. A membership card and names and addresses of other members will be sent to you if you send your name, address, and age to the Secretary, Jerome Eisenberg, 77 Victoria Street, Revere 51, Mass.

Boston Mineral Club

The annual meeting of the Club was held on December 4, 1945, at the New England Museum of Natural History, Boston, Mass. The following officers were elected to serve during 1946: President, Dr. C. W. Wolfe; Vice-President, Gunnar Bjareby; Secretary Miss M. Gertrude Peet; Treasurer; Miss Idella Wallace.

Colorado Mineral Society

A regular meeting of the Society was held on December 7, 1945, at the Museum of Natural History, Denver, Colo. The speaker for the meeting was John Magnison whose subject was "Feldspar, its source, preparation and distribution."

East Bay Mineral Society

Two meetings of the Society were held during December, 1945. On December 6th, Dr. T. K. Cleveland, of the Philadelphia Quartz Co., spoke on plastics. On December 20th, a pot luck dinner and Christmas party was held.

The Society meets at the Auditorium Lincoln School, Oakland, Calif.

New Jersey Mineralogical Society

A regular meeting of the Society was held on December 4, 1945, at the Public Library, Plainfield, N. J. The speaker for the meeting was Col. Martin L. Ehrmann, whose subject was "Mineralogical Collections in Europe Today."

Newark Mineralogical Society

The 236th meeting of the Society was held on December 2, 1945, at the Newark Museum, Newark, N. J. Dr. A. C. Hawkins was the speaker whose subject was "Mineral localities to be investigated in these post-war times."

Los Angeles Lapidary Society

A big Christmas party and dinner meeting was held by the Society on December 3, 1945, at the Royal Palms Hotel, Los Angeles, Calif. Harry R. Ringwald was Chairman.

Pacific Mineral Society

A dinner meeting of the Society was held on December 18, 1945, at the Asbury Apt. Hotel, Los Angeles, Calif. O. C. Smith, 2nd Vice-President of the Society, showed a motion picture in color of a pre-war tour he had made to some of our national parks.

Mineralogical Society of the Dist. of Columbia

A regular meeting of the Society was held on December 21, 1945, at the U. S. National Museum, Washington, D. C. Dr. David M. Larrabee was the speaker whose subject was "A geologist in Brazil".

Rochester Academy of Science
(Mineralogical Section)

A regular meeting of the Section was held on December 13, 1945, at the Rochester Museum of Arts and Sciences, Rochester, N. Y. The program consisted of a discussion of cleavage and fracture in minerals, also a talk "Some famous mineral localities" by Robert C. Vance.

Mineralogical Society of Arizona

Two meetings of the Society were held during December, 1945. On December 6, a birthday party was held commemorating the 10th anniversary of the founding of the Society. On December 20, J. R. Wilson addressed the Society on "Petrified Forests."

The Society meets at the Arizona Museum, Phoenix, Ariz.

Mineralogical Society of Southern California

A regular meeting of the Society was held on December 10, 1945, at the Public Library, Pasadena, Calif. Conway Snyder, of the Calif. Institute of Technology, was the speaker whose subject was "Nuclear Physics and Atomic Energy".

State Mineral Society of Texas

One of the greatest and most successful mineral shows ever held in Texas was that sponsored by the Society on November 17 and 18, 1945, at the Hotel Jefferson in Dallas, Texas. Visitors from all parts of the nation were in attendance and the many fine specimens on display created considerable interest and discussion.

Maine Mineralogical and Geological Society

A regular meeting of the Society was held on November 30, 1945, at 119 Exchange St., Portland, Me. The program consisted of a discussion on mica by McLaughlin, Laughlin, and Haven; "Placer and quartz mines in Alaska", by Leseman; "Why not make your own cabochons? by Skillin; and "My recent trip to Plumbago and Black Mountains," by True.

Marquette Geologists Association

A regular meeting of the Association was held on December 1, 1945, at the Academy of Sciences, Chicago, Ill. The program consisted of the showing of some very interesting sound-films on geology. In addition, Dr. John Ball's "Short lessons in geology" was also presented.

Nebraska Mineralogy and Gem Club

The annual dinner meeting of the Club was held at the Hotel Paxton, Omaha, Nebraska, on December 19, 1945. The dinner was followed by a discussion of plans and suggestions for the future of the Club and then was held the election of officers for 1946.

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A Note From Canada!

Editor R. and M.:

During the past few years, I, like many other members of the Association, have not had very much time to devote to collecting, cutting, etc. However, the monthly visitor, *Rocks and Minerals*, kept my interest up. Most of the articles on collecting expeditions were very interesting. It is also very interesting to go back over old copies of *Rocks and Minerals* and compare the progress that has been made in lapidary methods since, say 1935. Too bad it takes a war to bring these new ideas before the public. Millions of dollars for destruction but not one cent for construction! Mineral collecting and lapidary work bring out the beautiful in nature hidden within the rough exterior of some common pebble.

J. H. Yerex,
Clair, Sask, Canada.

November 27, 1945.

Monterey Bay Mineral Society

The 5th meeting of the Monterey Bay Mineral Society was called to order by the President, William O. Eddy, Monday evening, November 12, 1945, at the Y. M. C. A., Salinas, Calif. The minutes of the preceding meeting were read by the Secretary and approved as read. The new constitution which had been passed among the members prior to the meeting for perusal, was discussed and after two changes had been made, was adopted. As stated in the constitution, a Treasurer and 3 Directors were to be elected. The results were as follows:

Treasurer — Mr. William M. Farr, Directors — 1 year — Mr. K. W. Taylor
2 year — Mr. R. L. Dey
3 year — Mr. H. M. Samuelson

Chairman of the Refreshment Committee, Mrs. Daisy Samuelson, announced that the December 10th mineral auction and sale would be a Pot Luck Dinner meeting with each member bringing a casserole dish for himself and his guests, or each paying fifty cents for "sharing" the pot. The bread, butter, and coffee would be supplied by the Society. It was reiterated that all outsiders were welcome to come to both the dinner and the auction.

The notices of the Krueger Lapidaries of Los Angeles were posted on the new Society bulletin board for all interested. Also posted was the bibliography for rockhounds sent in by Mr. J. O'Burne of Del Monte. News of Carmel's Mr. Floyd Adams' offer of a group of mineral specimens for the auction, the entire proceeds of which would go to the club, was received with surprise and pleasure. Three new members were introduced and welcomed into the Society, and Mr. Roy Hohberger Y. M. C. A. Head, presented his Asst. Mr. James O'Niel, and his wife.

The President of the San Jose Lapidary Society, Mr. R. S. Grube, was introduced and spoke interestingly and instructively on mineral collecting, field trips near at hand, and lapidary work and equipment. Mr. Hohberger was presented with the Society's first Honorary Membership card for his sponsorship, and Mr. Grube was likewise honored in appreciation of his efforts and time spent in our behalf. News of fire loss to Chuckawalla Slim's trailer was received with concern by the group.

The meeting was adjourned to the tables where coffee and sandwiches were served during which time a prospective field trip to Pebble Beach was discussed and Mr. Pal Clark of Monterey was appointed head of the Excursion Committee and requested to obtain information for this trip. Three dollars ($3.00) in dues were collected from new members, $2.45 was collected for *Mineral Notes and News Magazine*, $2.10 for Federation dues, and seventeen cents cleared for the Treasury by the Refreshment Committee.

Yavapai Gem and Mineral Society

Prescott, Arizona. The dramatic and colorful story of quartz was the subject of J. Bryant Kasey's talk at the November meeting of the Yavapai Gem and Mineral Society. Alvin A. Hanson described the agate formations of Michigan, Montana, Wyoming, South Dakota, Oregon and Washington, and told of their distribution by the great Ice Age glaciers. There was a good attendance and a large exhibit.

During November the Society took a field trip to the onyx mines near Mayer, Arizona. At one time this onyx was mined to manufacture spheres for gear shift handles, but the expense of mining it was too great and the project was abandoned. The mines contain beautiful, yellow, brown and banded onyx.

Ida Smith, Secretary.

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A Sailor on Okinawa

Editor R. and M.:

I am a new member of the Rocks and Minerals Association. And I have thoroughly enjoyed being a member of such a nationally known organization.

Rocks and Minerals has been about the only contact I have had with mineralogy since I left the states (15 months ago) and I have been well informed on all of the latest happenings.

Okinawa, where I am now based, is not much of a place for a mineral collector except for limestone stalactites which are numerous in the surrounding caves. I have read the article about Okinawa Island in the May, 1945, issue of Rocks and Minerals, but so far I have not visited the cave that was talked about. I am saving my collecting energy for some good old stateside collecting ground.

My issues of *Rocks and Minerals* take about four months to reach me, but I still enjoy them very much — some news is always good news.

J. R. Starkey S1/c

November 9, 1945.

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R. I. Report Not Available

Editor R. and M.:

In the November, 1945, issue of *Rocks and* Minerals, under Bibliographical Notes (p. 536), there is reference to my recent report, "A Catalog of the Minerals and Mineral Localities of Rhode Island". I did not request its being mentioned and at this time I cannot supply copies to readers who request them, as I am away from home, residing in New York.

W. S. Winslow, Jr.

December 2, 1945.

700th Mineral Trip

Editor R. and M.:

Just made my 700th mineral trip in 21 years during which time I covered 37,000 miles. This last trip was to the abandoned Davis pyrite mine at Rowe, Mass., where we collected some gahnite (zinc spinel) crystals. This is a hard locality to find as it is located in "no man's land" near the Mohawk Trail. T. Lipton Smith, reecntly discharged from the army, was with me on the trip.

Wilbur J. Elwell,
Danbury, Conn.

December 3, 1945.

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HARRY YATMAN DRAKE

1894 — 1945

Harry Yatman Drake, 51, of 44 Laurel Avenue, East Orange, N. J., passed away on October 14th, 1945, at Presbyterian Hospital, Newark, N. J., after an illness of several months. Born in Newark, Mr. Drake lived most of his life in East Orange with his parents. He never married. Burial was at Newton, N. J.

He was a graduate of East Orange High School and had been employed at the New York offce of the West Virginia Pulp and Paper Co. since 1915. He was an elder of the First Reformed Church of East Orange, and a leader of the Young People's group in the Reformed Church Sunday School.

Mr. Drake was an ardent mineral collector and spent many happy hours collecting, sorting, and aranging his many specimens. He contributed several articles to *Rocks and Minerals*. His interest in young people led him to accept an appointment as Merit Badge Counselor in Rocks and Minerals for the Boy Scouts of America. In this capacity he passed on his knowledge to many members of the Scouting movement.

Mr. Drake is survived by his father, Mr. Charles Ludlow Drake of the Laurel Avenue address.

Neil A. Wintringham

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Agates in South Africa

Agates of various colors but usually of small size are common as pebbles in the soil and alluvial gravels in many parts of South Africa. Natal, Orange Free State, Transvaal, and Zululand have furnished good specimens. Some exceptionally fine specimens have been found in the gravels of the Orange and Vaal Rivers; these have been polished to form nice specimens for collections.

WITH OUR DEALERS

A new advertiser this month is the Long Beach Mineral and Lapidary Supply Company, of Long Beach, Calif. Their offerings consist of minerals and lapidary supplies.

Schortmann's Minerals, of Easthampton, Mass., announce their 1946 Annual Exhibition and Sale for February 22 and 23. They are also in the market for choice minerals and good collections.

A series of minerals from old Michigan localities are featured this month by Ward's Natural Science Est., of Rochester, N. Y.

Some gem bargains are offered this month by Krueger Lapidaries, of Los Angeles, Calif.

For opals, amethysts, tin oxide, and stone cups — contact New Mexico Piedras, of Santa Fe, N. Mex.

Topaz Gem Co., of Salt Lake City, Utah, does professional gem cutting.

Hatfield Goudey, of Yerington, Nev., has an interesting announcement in this issue. Be sure to read it!

Chuck Jordan, formerly of Los Angeles, but now of Sepulveda, Calif., is with us again. See his ad.

Thompson's Studio, of Pomona, Calif., have in stock some aristocrats of fluorescence.

Hermosa Gem and Mineral Shop, of Durango, Colo., has a good stock of Arizona and Utah agate, jasp-agate, agatized wood, etc.

Need any sterling silver mountings? Elliott Gem Shop, of Long Beach, Calif., can supply them.

The Wiener Mineral Co., of Tucson, Ariz., has 2 more ads of fine mineral specimens to intrigue collectors.

The Erskine Collection, of La Jolla, Calif., have in stock some nice purple apatite xls.

Another color parade of minerals is advertised this month by A. Joseph Alessi, of Lombard, Ill.

Brown's Atelier, of Las Vegas, Nev., can furnish you a "slice of California." Can you imagine that!

Of special interest to cutters and dealers is the fine gem-quality novaculite recently discovered by J. L. Davis and Son, of Hot Springs, Ark.

Werner J. Vietzke, of Rapid River, Mich., has a large stock of Michigan specimens — rocks, minerals, and fossils.

Gem quality variscite from Utah can be had from A. L. Jarvis, of Watsonville, Calif.

Your money's worth in Arkansas minerals — is the caption of the ad of Lewis B. Pringle, of Little Rock, Ark., a new advertiser.

Another new advertiser is J. D. Robinson, of Kansas City, Mo., who features lapidary saws and machines.

Of special notice to New England collectors is the ad of Boodle Lane, of Galena, Kans.

Diamond drill your gems! suggests E. H. Shumaker, of Chicago, Ill.

Bubble quartz xls can be obtained from the H. E. Powell Co., of Little Rock, Ark.

Charles E. Hill, of Phoenix, Ariz., features some more of his attractive Arizona agate, jasper, and petrified wood.

Warner and Grieger, of Pasadena, Calif., have 2 ads in this issue featuring lapidary equipment.

Arthur and Lucille Sanger, of Chicago, Ill., have in stock some attractive pendants and cabochons. Just what you need!

Lloyd M. Demrick, of San Francisco, Calif., features a semi-professional lapidary machine.

Again the Western Mineral Exchange, of Seattle, Wash., is featuring lapidary equipment and supplies.

National Mineral Supplies, of Kenmore, Wash., have a special on Washington ores and minerals.

Colorful cabochon material is always in stock at Mrs. B. F. Nonneman, Salinas, Calif.

Beautiful California barite can be obtained from Roberts and Stevens, Monterey Park, Calif.

Mrs. Mae Duquette, of San Gabriel, Calif., has some extremely fine agate slabs on hand.

New Mexico moonstones — cutting quality — are obtainable from O. T. Branson, of Albuquerque, N. Mexico.

The Keweenaw Agate Shop, of Ahmeek, Mich., presents some more choice cutting material and also features the Toledo Variable Speed Transmission.

Attention Mineral Collectors! — says Floyd George Brown, of Los Angeles, Calif., in his ad.

The volcanoes of Hawaii have always been of special interest to geologists. Our readers can learn more about them by studying the pictorial history of Hawaiian Islands that is put out by John S. Albanese, of Newark, N. J.

BAYARD, NEBRASKA, QUARTZ MINERALS

By RICHARD MITCHELL
Box 612, Bayard, Nebraska

Bayard is a small town located near the western edge of Morrill County which is in western Nebraska. Many varieties of quartz minerals have been found in the sand hills of this town.

I moved here in the fall of 1943 and noticed the abundance of quartz soon after. One day I happened to find some jasper and agate in our back yard which started me in collecting quartz minerals and thus I began to explore the surrounding sand hills. The sand hills are located at the eastern edge of the town.

The following varieties of quartz have been found.

Agate: Many varieties of agate have been found. A few moss agates resemble the Sweetwater moss agates from Wyoming and these even show a greenish fluorescence under the purple-X bulb.

Three shades of frost agate were found. One is a brown type, another a dark gray, and the third, a light gray. All these have white spots in them that look like frost and snow.

One real nice eye agate was also found. It is brown in color with rings of white, red, pink, and blue-white chalcedony. It is not a very large specimen.

Two small pieces of red agate have also been found.

Basanite: Coal-black pebbles of this interesting quartz mineral, which is sometimes called touchstone, have been found.

Chalcedony: This quartz mineral is very abundant. It occurs as nodules and is white, light brown, and dark brown in color. Sometimes it is colorless. Certain specimens of this Bayard chalcedony will show green fluorescence under the Mineralight and the purple-X bulb.

Jasper: Nice pebbles of brown, red, and yellow jaspers occur here. Jasperized wood, too, has been found but only in small amounts.

Unclassified: An interesting mineral is found here which I call "Bayard Egg". It occurs as rounded pebbles which appear to be pitch-black throughout but when broken open are red, yellow, or orange on the inside. Fossils of sea life have been found imprinted upon these pebbles.

Fossils: Another interesting group of quartz minerals are found in this locality which contain fossils of ancient sea life. I have two very nice specimens which contain almost perfect shells. One is light yellow in color and the other red. The quartz minerals are chert.

ATTENTION MINERAL COLLECTORS SOMETHING NEW

Beautiful calcite sample specimens for ultra-violet lights from edge of Death Valley. Colors, yellow, green, white. Price **$1.00.**

FLOYD GEORGE BROWN
3073 W. 12th Pl., Los Angeles 6, Calif.

STORE CLOSED

The Desert Rat has lost his lease and so was forced to vacate his store at 2667 E. Colorado Street, E. Pasadena, Calif. During the next few months he will be touring the country so watch out for the old gem trailer to pass through your town.

For the time being — Good-bye and thanks to all my customers.

GEO. W. CHAMBERS (Desert Rat)

Choice Desert Specimens

SPECIAL — Optical basal plates from our mines. Used in making the secret gun sight. Never before advertised. These plates fluoresce a nice red. 2 x 2 in. —**$1.00** to 5 x 7 in.—**$12.00**

CALCITE XL GROUPS — Rare crystallization — show specimens. 2 x 2 in.—**$2.00** to 4 x 5 in.—**$7.50**

MIXED Mojave Desert cutting material. Agates, Jaspers. 5 pounds — **$2.50**

HOLLOW GEODES — Chocolate Mts. Sparkling Quartz Xls and beautiful Calcite Xl interior. **50c** to **$4.00.**

Satisfaction Guaranteed. Please include postage with remittance.

JACK FROST
59 E. HOFFER STREET
BANNING, CALIFORNIA

ARISTOCRATS of fluorescence

Willemite and Calcite, New Jersey: Outstandingly beautiful in bright green and red coloring, with fleeting pin points of blue phosphorescence. Sizes from 2" to 5". Priced at **50c** to **$6.00.**

Hyalite Opal on Opalite, Calif.: Remarkably vivid, green coating on opalite matrix. Sizes from 2" to 10". Priced at **50c** to **$10.00.**

These are among the most highly desirable specimens and react satisfactory under cold quartz lamps.

Sent postpaid and guaranteed by

THOMPSON'S STUDIO
385 W. Second St. Pomona, Calif.

Gems and Crystals

Send for illustrated catalog listing choice crystals, rough and cut gemstones, polished specimens, fluorescent minerals, fluorescent lamps, petrified wood, etc. It is yours for the asking. Write today.

V. D. HILL
Complete Gem and Mineral Establishment
ROUTE 7-C SALEM, OREGON

COLLECTION FOR SALE

Due to constantly being transferred must sell my large collection of minerals built up for 20 years. Lots of 25-lbs at **$5.00, $10.00,** and **$15.00,** depending on quality. Many choice specimens in **$15.00** lots. A few lots at **$25.00** containing many rare minerals. Two lots at **$50.00** containing my best. Money refunded if I have sold out or you are not satisfield. Even the **$5.00** lots contain good specimens (including cutting material) that would cost many times this amount if purchased from a dealer. Shipped freight or express collect.

LIEUT. D. S. FRASER
145 Ivy Street Spartanburg, S. C.